

**Exercise 1** For each function, select all zeros of the given function. If there are none, do not select any options.

- (a) Let  $f$  be a function defined by  $f(x) = x^2 + 9$ . Select all zeros of  $f$ .

**Select All Correct Answers:**

- (i) 3
- (ii)  $-3$
- (iii) 0
- (iv) 9

- (b) Let  $g$  be a function defined by  $g(x) = -(x - 5)^2$ . Select all zeros of  $g$ .

**Select All Correct Answers:**

- (i) 0
- (ii)  $-5$
- (iii) 5 ✓
- (iv) 2

- (c) Let  $h$  be a function defined by  $h(x) = x^2 - 3x - 4$ . Select all zeros of  $h$ .

**Select All Correct Answers:**

- (i)  $-1$  ✓
- (ii) 0
- (iii) 2
- (iv) 3
- (v)  $\frac{4}{3}$
- (vi) 4 ✓

- (d) Let  $j$  be a function defined by  $j(x) = -4(x + 3)^2 + 20$ . Select all zeros of  $j$ .

**Select All Correct Answers:**

- (i)  $-3 - \sqrt{5}$  ✓
- (ii)  $3 - \sqrt{5}$
- (iii)  $-3 + \sqrt{5}$  ✓
- (iv)  $3 + \sqrt{5}$